IOWA HIGHWAY RESEARCH BOARD

Minutes of December 11, 2003

Regular Board Members Present

L. Brehm
R. Ettema
T. Fonkert
R. Gould
L. Greimann
D. Julius
B. Keierleber
J. Krist
C. Marker
M. Nahra
G. Parker
C. Van Buskirk

Alternate Board Members Present

L. Jesse for K. Mahoney
G. Miller for J. Selmer
B. Younie for J. Adam
J. Berger
J. Ites

Board Members With No Representation

None

Secretary

M. Dunn

Visitors

Max Grogg	*FHWA*
Clare Schroeder	*Iowa Concrete Paving Association*
Sara Buseman	*Iowa Department of Transportation*
Ed Engle	*Iowa Department of Transportation*
Mike Heitzman	*Iowa Department of Transportation*
Mohammad Mujeeb	*Iowa Department of Transportation*
Dan Seward	*Iowa Department of Transportation*
Jim Cable	*Iowa State University/CCEE*
Ed Jaselskis	*Iowa State University/CCEE*
Max Porter	*Iowa State University/CCEE*
Steve Andrle	*Iowa State University/CTRE*
Tom Cackler	*Iowa State University/CTRE*
Wilfrid Nixon	*The University of Iowa*

The meeting was held in the East/West Materials Conference Room at the Iowa Department of Transportation, Ames, Iowa. The meeting was called to order at 1:00 P.M. by Dr. Rob Ettema.

Agenda review/modification

- No additions or modifications.

Approval of the minutes

- Bob Younie moved to approve the minutes from the October 31, 2003 meeting with no additions or corrections. Glen Miller seconded. Carried with 14 yes, 0 no, and 0 abstaining.

Selection of Chair and Vice-Chair for 2004

- Jeff Krist nominated Greg Parker, City of Cedar Rapids, to serve as IHRB Chair for 2004. Lyle Brehm seconded. Carried 13 yes, 0 no, and 1 abstaining.

- Roger Gould nominated Larry Jesse, Iowa DOT, to serve as IHRB Vice-Chair for 2004. Glen Miller seconded. Carried 13 yes, 0 no, and 1 abstaining.

Announcement of regular and alternate member changes for 2004

- *Recognition of Board members ending their terms of service with the IHRB:*
  - Doug Julius - January 1998 - December 2003
  - Brian Keierleber - January 2001 - December 2003
  - Kevin Mahoney - January 2001 - December 2003

- *Recognition of members completing a term and being reappointed:*
  - Roger Gould, Iowa DOT Engineering Bureau, has been reappointed for another 3-year term.
  - Jeff Krist, City of Council Bluffs, had served only part of a 3-year term as a regular member and has been reappointed for another 3-year term.

- *Announcement of new regular and alternate members:*
  - Jon Ites, Buena Vista County, was announced as the new regular member for District 3. Information provided since the meeting has announced Steve Camp, Pocahontas County, as the new alternate member for District 3.
  - Clark Schloz, Jackson County, was announced as the new regular member for District 6. Information provided since the meeting has announced Steve Gannon, Linn County, as the new alternate member for District 6.
  - Larry Jesse, Office of Local Systems, was announced as the new regular member for the Iowa DOT. Ahmad Abu-Hawash, Office of Bridges and Structures, was announced as the new alternate member for that seat.

Proposal, "Laboratory Study of Structural Behavior of Alternative Dowel Bars"

- A problem statement for this research had been presented at the October IHRB meeting. Dr. Max Porter, Iowa State University/CTRE, mentioned the report HR-1080, "Synthesis of Dowel Bar Research", that had been completed identifying the gaps in research on dowel bars and how this proposed study ties with those findings. The principal investigators, funding partnership (IHRB, FHWA and industry) and budget of the proposed research were all recapped.

- Mark Nahra moved to approve the proposal. Charles Marker seconded. Carried with 15 yes, 0 no, and 0 abstaining.

Proposal, "Design and Construction Procedures for Concrete Overlay and Widening of Existing Pavements"

- A problem statement for this research had been presented at the October IHRB meeting. Dr. Jim Cable, Iowa State University/CTRE, reviewed the different focuses for the IHRB and FHWA budgets. It was mentioned that communication with Kevin Jones, Iowa DOT Testing Engineer, has led to some additional things that may be tried on the testing and instrumentation part of research.

- Brian Keierleber moved to approve the proposal. Doug Julius seconded. Carried with 15 yes, 0 no, and 0 abstaining.

Problem Statement, "Measuring Pavement Profile at the Slipform Paver"

- Dr. Jim Cable, Iowa State University/CTRE, recapped the budget breakdown (IHRB, FHWA, and industry) and information that was presented in the problem statement at the October IHRB meeting. It was reported that preparation has begun with the Fred Carlson Co., using the Ames Engineering equipment, and Manatts, using the Gomaco equipment, for getting the equipment ready to go to the field for this project.

- The use of the statistical consultant, Steve Karamihas, University of Michigan, was discussed. With his expertise specific to profile analysis, this research will benefit from his services.

- It was mentioned that the Ames Engineering equipment is more universal and should be able to transfer to other pavers. The technology developed in general will be transferable.

- This will be a diagnostic tool for the pavers and track where the loss of smoothness happens since the monitoring can be done across the pavement in each wheel path directly behind the pan and in an alternate set up, behind separate parts of the paving train. Corrections can be made right there.

- Nothing further has developed from FHWA's initial request that more than two project be used to review the equipment.

- Bob Younie moved to approve the proposal. Brian Keierleber seconded. Carried with 15 yes, 0 no, and 0 abstaining.

Final Report TR-474, "Development of a Mix Design Process for Cold In-Place Rehabilitation Using Foamed Asphalt - Phase I"

- Dr. Hosin "David" Lee, The University of Iowa, had a scheduling conflict, so Mike Heitzman, DOT Office of Materials and member of the project's Advisory Committee, provided a handout and reviewed the presentation. The general problem statement; research progress, including Tasks A through D; information and test results on different gradations; summary of first round tests; changes made and summary of second round tests; and general summary and conclusions of Phase I were reviewed. A brief outline of Tasks A through F of Phase II was also shown.

- The differences in results from the first series of tests to the second series of tests, especially with the fine gradations and wet strength, were discussed. It was reiterated that the first series of tests included a 24-hour soak, which led to varied levels of wetness in the cores; some were still dry for testing. The second series of testing used vacuum saturation so the cores were more consistent with the level of saturation, relative to the density. A much clearer picture will be available after comparing the six different RAP samples that will be tested in Phase II of the research.

- Charles Marker moved to approve the final report. Larry Jesse seconded. Carried with 15 yes, 0 no, and 0 abstaining.

Final Report HR-391, "Optimal Usage of De-Icing Chemicals When Scraping Ice"

- Dr. Wilfrid Nixon, The University of Iowa, provided a handout for the presentation and reviewed the project outline and goals; ice type studies; micrograph of refrozen ice; chemical studies and results; successful test graph; scraping forces graph; chemical tests, results and interpretation; and operational implications and conclusions of the project.

- This particular study tested materials that were supplied by the DOT and did not include magnesium chloride.

- Christy Van Buskirk moved to approve the final report. Greg Parker seconded. Carried with 14 yes, 0 no, and 1 abstaining.

Develop/Finalize RFPs for 2nd Solicitation for FY 03-04

- Mark Dunn presented an overview of the top 18 prioritized topics, including the topics which were sent out in the first round of solicitation, those being reviewed for the second round, and topics with other action being taken. Three separate Excel spreadsheets with these written comments were included in the Board packet.

- ***Review of IHRB 03-14, Development of a Decision Support Model for Assessing Archaeological Survey Needs for Bridge Replacement Projects in Iowa***
  - This study would be narrowed towards small bridge projects.
  - This has the potential to save $800 to $1000 per each applicable project, which would be a significant savings to the counties.
  - The State Archaeological Office is doing research on landforms, which would work in with this.
  - The State Historic Preservation Office (SHPO) would need to be worked closely with on the system to make sure they approve it.
  - It was agreed, by consensus of the Board, to have a sole source solicitation of this RFP to the State Archaeological Office.

- ***Review of IHRB 03-15, Development of a Manual of Practice for Roadway Maintenance Workers***
  - In the background work for this RFP, it was found that the state has a handbook that outlines personnel, equipment, and other standards for maintenance activities, so the focus of this project may be better directed at designing a resource for counties and cities.

- When the DOT Office of Maintenance reviewed this RFP, one of the comments was that the budget of $40,000 - $60,000 might not be enough. TR-462, "Manual for Roadside Control of Trees and Brush" had a similar end product to what is expected from this research and it had a budget of just under $62,000.
- The goal of this research is to have a manual that is a safety and training reference tool for both new and experienced employees, with a specific target of maintenance workers and backhoe operators. Some of the recommended topics for the manual included the proper procedures for patching a pothole, repairing a concrete blow up, proper methods for doing ditch cleaning (trapezoidal ditch), and clean out of a storm sewer intake.
- The above topic list and the list on the RFP would be a starting point for the Principal Investigator (PI). The PI would need to work closely with the steering committee to guide the specific scope of the project.
- With motor grader operation, tree and brush control, and traffic control each having their own guide, they would not be addressed in this manual. This research would focus more on general repair and maintenance issues.
- Due to the limited remaining IHRB budget of the Street funds, and the differences between the cities' and counties' needs (and even from one city to another), it was decided that the focus of this project should be only counties. The possibility of a Phase II with a city focus could be revisited at a later date.
- With shortening the scope to counties only, it was decided that it would be appropriate to list the high end of the range for the anticipated budget amount (around $60,000 or $65,000).

• ***Review of IHRB 03-17, A Guide for Monitoring and Protecting Bridge-Waterways Against Scour***
- Dr. Ettema reviewed the motivation behind this topic. There is an active NCHRP project focused on developing better ways to predict scour. It is thought, however, that the bulk of the problem lies more in monitoring, maintenance and looking for scour prone conditions, rather than coming up with a more accurate prediction of scour depth. The second motivation is tied to the research done by Dr. Wipf, Iowa State University, on bridge maintenance and monitoring (TR-429, "Evaluation of Appropriate Maintenance, Repair and Rehabilitation Methods for Iowa Bridges"). The report focuses the bridge superstructure and there is a need for a companion research project focusing on the waterway approaching and under the bridge. Hydraulic engineers around the country agree there isn't good understanding of the variety of scour processes that can occur and some of the mechanisms whereby scour does occur are not at all recognized.
- The effort here is aimed at coming up with a well illustrated guidebook summarizing what to look for in scour prone conditions; how scour can occur, for example there are significant differences between scour processes at wing wall abutments versus spill through abutments; and practical suggestions on ways to protect bridge approaches and bridge waterways.
- No additional comments or recommended changes.

Annual review of the IHRB Business Plan

• Some general editorial suggestions were given to Mark Dunn for consideration and were not specifically reviewed during the meeting.

• It was suggested that in Board Operating Procedures, Section 2B, the first 2 bullets be combined and another bullet be added to state that projects can be brought to the Board outside of the prioritization process which have a relationship to a prior or current IHRB project.

- In Board Operating Procedures, Section 5, Supporting Implementation, it was suggested that it be stated that the Board will maintain an accessible list of prior projects and explain what the list entails. The Business Plan has the web address for IHRB information listed with Mark Dunn's contact information.

- It was recommended that page numbers be added to the Business Plan.

- Mark Dunn will make these changes and the Business Plan will be brought back to the January 30, 2004 meeting.

New Business
- None

Dr. Rob Ettema thanked the Board for the honor of serving as Chair for 2003 and adjourned the meeting. He, in turn, was thanked for his service as Chair.

Date of Next Meeting: THE NEXT MEETING WILL BE HELD <u>FRIDAY</u>, JANUARY 30, 2004 AT 9:00 A.M. IN THE EAST/WEST MATERIALS CONFERENCE ROOM AT THE IOWA DOT, CENTRAL COMPLEX, IN AMES, IOWA.

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Mark Dunn, IHRB Secretary